

ABSTRACT OF THE DISCLOSURE

5 An electric discharge detection circuit includes an x-ray tube, a power supply that applies a high voltage to the x-ray tube, a tube voltage that detects the voltage applied to the x-ray tube, a differentiation circuit that differentiates a signal output from the tube voltage detector, a zero-crossing comparator that discriminates the polarity of an output signal from the differentiation circuit; a re-triggerable one-shot pulse generating circuit that generates one-shot pulses at a regular period, using the pulse output from zero-crossing comparator as the trigger, a counter that is input with the one-shot pulse output and counts the pulses output from the zero-crossing comparator while operation is enabled period, an x-ray cut-off circuit that terminates the generation of high voltage when it receives the carry output and a display that displays the occurrence of an electric discharge phenomenon upon receipt of the carry output .